



THE EFFECTS OF DIGITALIZATION ON TAX REVENUE MOBILIZATION IN SUB-SAHARAN AFRICA

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Abstract

The study examined the effect of digitization on tax revenue mobilization in sub-Saharan Africa using panel data spanning 2002 to 2021, with a two-step system GMM estimator, and adopting quantitative approach. Fifty-four (54) African countries were sampled using convenience sampling technique with forty-two (42) selected for the analysis. The study found that, there is a positive significant relationship between digitization and tax revenue mobilization and recommended that policymakers focus attention on digitization to enhance effective tax revenue mobilization. It was also revealed that, all the control variables, population, trade, and GDP have a significant relationship with tax revenue mobilization in sub-saharan Africa. It was further recommended that, future research could be conducted around the moderation effect of institutional quality, digitization, and tax revenue mobilization in the sub-saharan Africa.

Keywords: Tax-revenue, Digitization, Trade, Debit-card, Credit-card, Population

INTRODUCTION

The collection of taxes is crucial to the survival of all nations, both the advanced and the developing. To begin, the federal government relies heavily on taxation as tax collection is obligatory and constant, guaranteeing a steady flow of revenues (Caselli, 2023; Zhao, 2023). Taxation makes an effort to meet social and public demands by financing the provision of public goods and services. Taxes are necessary because governments must



invest in defence forces and the legal system to ensure the safety and fairness of society (Alam, Fawzi, Islam, & Said, 2022). Many underdeveloped countries are unable to fund large-scale programs due to a lack of tax collection relative to Gross Domestic Product (Aizer, Hoynes, & Lleras-Muney, 2022). As a result, a rise in domestic income and a corresponding growth in public services are targets of government policy. However, rising public spending and higher taxing should be approached with caution because, beyond a certain level, distortionary taxes tend to impede economic growth. Tax bases are not simply given to governments; they may be produced or destroyed (Di-Nunzio, 2022).

Even before the recent pandemic, there were worries about financial and non-financial threats to the global economy (Hassan, Elamer, Lodh, & Roberts, 2021; Abhayawansa & Adams, 2021). Concern was already being expressed about global climate change, the approaching debt crises in developing and emerging countries, and persistent inequality. The importance of creating a global coordination structure and a global financing framework for sustainable development was at the heart of these discussions. In developing countries, where the aforementioned issues are most severe, the cost of achieving the 2030 Sustainable Development Goals (SDGs) has been estimated at \$2.5 trillion annually (Abduh, 2019). While there isn't universal agreement on the best ways to finance global development it's generally understood that traditional sources like domestic revenue mobilization have untapped potential (Anderson, Rainie, & Vogels, 2021).

High inequality, informality, debt, and dependence on aid were already afflicting African states before the coronavirus pandemic broke out (Yahya, 2023). Africa is at a point in its history where its resources are more crucial than ever, to begin, the United Nations Agenda 2030 to end poverty, reduce inequality, strengthen institutions, and battle climate change requires adequate funding (Brooksworth, Mogaji, & Bosah, 2023). This plan has the long-term goal of increasing prosperity for all Africans while decreasing reliance on foreign aid and bolstering governmental, economic, and social structures that are weak. All of the aforementioned factors come down to one thing, the ability of African tax systems to produce revenues to pay the projects necessary for durable growth trajectories.

In fact, African leaders are forced to choose between increasing resource mobilization efforts or reducing capital expenditures, the latter of which has obviously negative growth implications, because of the unpredictability of aid flows, the long-term growth implications of concessional loans, and the macroeconomic instability associated with seignior age (Murray & Fisher, 2022). Continually, it is essential that Africa's tax systems bring in enough money. But the organization for Economic Cooperation and Development 2020 Income Statistics report shows that African countries efforts to raise tax

revenue are weak when compared to those of countries on other continents (Ofori & Asongu, 2022; Mpofu, 2022). In comparison to Europe (41.1%), Asia and the Pacific (21%), and Latin America and the Caribbean (22.9%), Africa's average tax to GDP ratio was 16.6% (Cheng, Kannaiah, & Shabbir, 2022).

The collection of taxes is a necessary part of any functioning government. As such, it helps strengthen the social compact between the state and its citizens. Taxation is a historically significant part of the relationship between monarchs and their subjects (Young, 2022; Rather, 2022). New research shows the importance of this correlation in developing countries, because state formation must rely on governments' taxation capabilities. Domestic revenue mobilization is vital to fulfilling the sustainable development objectives, as was emphasized during the United Nations Financing for Development Conference in Addis Ababa, which reached beyond the academic community (Wolff, 2022; Abekah-Nkrumah, Assuming, & Mohammed, 2020). Domestic revenue mobilization has been a focal point of international policy debate ever since the Monterrey Consensus on Financing for Development in 2002, with the International Monetary Fund (IMF), the Organization for Economic Cooperation and Development (Marinescu, 2022 ; Lesage & Lips, 2022). The economic theory of public enforcement of tax law provides one explanation for the correlation between the emergence of states and taxation (Abdul-Jabbar & Bin-Nashwan, 2022).

Changes and reforms in tax policy and administration have drawn on the findings of a number of these theoretical analyses. Here, we take a look at three of the most important tax reforms in Sub-Saharan Africa over the past three decades: the creation of Large Taxpayers Units, the implementation of Value-Added Taxes, and the reorganization of tax administrations in Semi-Autonomous Revenue Authorities (Gupta, Jalles, & Liu, 2022; Babalola & Ojobola, 2022). Income as a percentage of GDP increases from 17.7 percent to 18.5 percent over the same time period, and from 13.3 percent to 15.3 percent if we omit revenue from non-renewable natural resources (Kumar & Prabhansu, 2022). Reddy, Cameselle, and Adams (2019) stressed the importance of revenue mobilization to economic growth, and these measures have been important to the government's efforts in this regard.

At global conferences on economic growth, the issue of how to improve revenue collection in developing countries is often discussed at length. Despite the critical need for domestic resources to finance poverty reduction and infrastructure development, tax-revenue ratios remain chronically low in many SSA countries (Banda, 2023; Mahmood, 2023). New empirical studies examining the reasons for failure to increase tax-revenue ratios point to structural and institutional issue (Kipuka-Kabongi & Samy, 2023). In this light,

it is worth noting that, with the exception of SSA countries, Taiwo and Ebere (2023) found a significant positive link between VAT adoption and government revenue. Additionally, it has been demonstrated that institutional quality has a positive influence on SSA countries, in conjunction with other structural aspects like natural resources (Redmond & Nasir, 2020). Using a new indicator of a business law reform, we test its effect on tax revenue and total revenue for a large panel of SSA countries; and accounting for potential endogeneity issues by using instrumental variables techniques with internal instruments, our paper adds to this body of empirical literature (Jalles & Gupta, 2022).

To maintain close contact with international trades toward automated payment systems, the Federal Inland Revenue Service in Nigeria hosted the e-tax system with the Nigeria Inter-Bank Settlement System in 2015 (Nnubia, Okafor, & Chukwunwike, 2020). Nigeria has implemented an electronic tax system to improve the country's revenue collection and give taxpayers more flexibility in terms of when and where they can pay their taxes (Yusuf, 2022; Okafor, Nnubia, Chukwunwike, Asogwa, & Ogan, 2020). The process of generating financial resources for a government is known as revenue generation. Throughout history, governments have relied mostly on taxation to fund their operations. A tax system's classic goal is to generate enough revenue to cover public expenditures. This money is needed to pay for things like defence regulation and instruction that private citizens can't supply, or things like healthcare and education that the federal and state governments believe are best handled at the national and local levels.

According to Mabugu (2022) research of the dynamics of domestic revenue mobilization across four decades, the ratio of taxes and other revenues to GDP rose on average from the early to late 2000s, albeit this trend was not universal. A similar analysis was conducted by Adegboye, Uwuigbe, Ojeka, and Uwuigbe (2022) who found that, below specific ICT thresholds, industrialisation and ICT are both necessary and sufficient elements for tax revenue mobilization. Furthermore, the author discovered that beyond these ICT limits, supplemental policies are required to maintain the overall positive influence on tax revenue collection. According to Ershaid (2021) analysis of the impact of computerized tax registers on VAT compliance, there is a strong relationship between the two. According to Apeti and Edoh (2023) who studied tax incentives in sub-Saharan Africa, the lack of political will for a digital approach to tax collecting is a fundamental barrier to revenue mobilization in most developing countries. Ogbonna, Emmanuel, and Ngozi (2022) looked into the impact of e-tax payment on revenue generation in Nigeria and found a weakly positive association between revenue collected before and after the implementation of a capital gains tax. It has recently been questioned whether or not traditional methods of tax revenue mobilization

should be maintained. The impact of digitization on Africa's tax revenue collection is an area where surprisingly little studies has been performed. This study seeks to address a lacuna in the literature by analysing the effect of digitalization on tax revenue mobilization in sub-Saharan Africa, in light of recent developments in the field of taxes, which have reignited interest in the subject. How the rest of the paper is structured is as follows: This paper is organized as follows: Section 2 provides a literature review on the impact of digitization on tax revenue in sub-Saharan Africa; Section 3 describes the methodology used for the empirical analysis; Section 4 details the findings and Discussion; and Section 5 concludes and makes policy recommendations.

LITERATURE REVIEW

Wang, Duan, Yang, and Cao (2023) theorized that, Technology Acceptance Model is one of the most significant research models in studies of the determinants of information systems and information technology acceptance for predicting persons' desire to use and acceptance of information systems and information technology. Over the past decade, the Technology Acceptance Model has garnered great interest from scholars in the field of information systems. There are two factors in the Technology Acceptance Model, including perceived ease of use and perceived usefulness. Perceived usefulness is the extent to which a person believes that utilizing a specific information system or information technology would improve his or her job or life performance. Perceived ease of use is the degree to which an individual believes that utilizing a specific information system or information technology would be effortless. Perceived ease of use and perceived usefulness have a favourable influence on attitudes about an information system, as well as on individuals' intents to use and acceptance of the system (Mishra, Shukla, Rana, Currie, & Dwivedi, 2023). Additionally, perceived ease of use influences perceived utility in a favourable manner, and both perceived ease of use and perceived usefulness are influenced by external variables. The following are the proposed technology acceptance model measurement items. Typically, perceived ease of use is measured using at least three items; name of information system or information technology is easy for me to use. Typically, perceived usefulness is measured with at least three items; using name of information system or information technology would increase my effectiveness for work, study, life tasks. Typically, at least three items were used to measure an individual's attitude; an example item: It is prudent to utilize name of information system or information technology. Typically, behavioural intention is measured with at least three items; aim to use name of information system or information

technology as often as necessary. While theory of reasoned action and theory of planned behaviour can study system utilization by incorporating subjective standards and perceived behavioural restrictions with attitudes toward utilizing technology, the Technology Acceptance Model is more applicable to online environments due to a number of benefits. First, the Technology Acceptance Model is explicit to information system application of the notions of usability and utility. In addition, Technology Acceptance Model is more economical. In addition, Technology Acceptance Model is more robust across a variety of information system applications.

The Technology Acceptance Model (TAM) predicts that when economic agents are presented with new technology, a variety of characteristics influence their decision on when and how they will use it and how useful it will be (Alsyouf, Anshasi, & Albugami, 2023). This usefulness refers to how the digital system will improve work efficiency and accessibility. The model suggests that an effective tax administration should be proportional to incomes, to pay, convenient, and less expensive for both taxpayers and administrators. In addition, digital technology can play a role in strengthening revenue management by aiding tax authorities in achieving greater tax compliance, detecting fraud, and removing corruption chances (Mascagni, Mengistu, & Woldeyes, 2021). In the context of a macroeconomic framework, the TAM can be seen as industries adopting and employing technologies that improve their efficacy and efficiency during the industrialisation process (Asongu & Ofori, 2022). Consequently, such efficacy and efficiency generate favourable industrialization outcomes that generate tax income.

The Technology Acceptance Model is one of the most prevalent explanations for Information System usage. Numerous researches have been done, resulting in modifications to the first presented model. Taylor and Todd presented a new model termed the combined TAMTPB model, which incorporated the Technology acceptance model and theory of planned behaviour (Sharif & Naghavi, 2021). Venkatesh and Davis (2000) suggested a new version of TAM called TAM2 that included more variables. Williams, Rana, and Dwivedi (2015) introduced the Unified Theory of Acceptance and Use of Technology Model.

Chung and Tan (2004) have included a new playfulness variable to their study of Internet acceptability. Bashir and Madhavaiah (2015) advocated modifying TAM by adding experiences, self-efficacy, perceived risk, and social influence variables. Agarwal and Karahanna (2000) added cognitive absorption, playfulness, and self-efficacy to the TAM model in another study. In a study, (Abu-Dalbouh, 2022) examined TAM by examining two categories of perceived usefulness in the short-term and long-term. After examining the

individual acceptance and use of the website Gómez-Ruiz, Grimaldi-Puyana, Lara-Bocanegra, and García-Fernández (2022) introduced two additional dimensions to TAM: perceived entertainment value and perceived presentation attractiveness. Dalbouh (2022) incorporated the peer influence factor into the Technology Acceptance Model. According to a study by Haverila, McLaughlin, and Haverila (2022) goal directed users had a substantial correlation between perceived usefulness and behavioural intention. Molina, Chau, Rodewald, and Garip (2022) compared three models; the Technology Acceptance Model, the Theory of Planned Behaviour, and a deconstructed model that is theoretically appropriate in the setting of healthcare professionals in Hong Kong. The results suggested that TAM was more effective than TPB in describing physicians' intentions to employ telemedicine technology.

Ridwan, Tanveer, and Khan (2023) used time-series data and the Autoregressive Distributed Lag (ARDL) estimation approach to demonstrate that ICT infrastructure has no substantial positive impact on overall tax revenue collection. Nevertheless, it is possible to uncover tax loopholes and administer a country's taxation system effectively in the context of good governance and efficient systems. Using unbalanced panel data Wandaogo, Sawadogo, and Lastunen (2022) present compelling evidence that ICT penetration drives tax revenue mobilization. Specifically, the results indicate that, among the four ICT penetration indicators mobile subscription, internet access, personal computers, and fixed broadband subscription, fixed broadband subscription contributes the most to three distinct tax revenue indicators, namely overall tax revenue, VAT, and corporate tax.

Bari, Khan, and Ullah (2022) studied the impact of ICT readiness and ICT usage on tax revenue mobilization in low- and middle-income countries. The authors use the fixed effect estimator to demonstrate that, although ICT readiness reports a positive association with tax revenue, it is not statistically significant, and ICT usage is a major tax revenue mobilization enhancer. In addition, the authors state that ICT use increases direct tax revenues through personal income tax and indirect tax revenues through VAT, and that the pass-through effect is evident through three channels: corruption control, government effectiveness, and tax compliance. Abbasi, Hussain, and Radulescu (2022) examine the tax resilience in developing countries, the authors conclude that an increase in imports, the manufacturing sector, the services sector, monetization, and the budget deficit all have a favourable impact on tax collection, whereas an increase in foreign aid grants hinders tax collecting efforts. Koh, Lee, and Siah (2022) identify political stability, corruption, accountability, trade liberalization, foreign aid, and economic development as the primary drivers of tax revenue generation in the developing world. Kutlay and Öniş (2022) conclude

that political regimes are critical for tax revenue collection, with full autocracies and democracies generating greater tax revenues than regimes situated between the two edges. Regarding the effect of the real sector on tax revenue performance, Obeng and Mwinlaaru (2022) find that the agricultural sector hinders tax revenue mobilisation efforts due to its informality and the fact that records of its activities are not typically maintained, unlike the industrial and service sectors.

Tax efforts, defined as a ratio of tax to Gross Domestic Product, are the major metric of a country's tax mobilization success. Other metrics of tax mobilization include the ratio of income tax to GDP, the ratio of non-resource tax to GDP, and the percentage of total tax revenue derived from income taxes. These other indicators are viewed as more rigorous efforts and capability measurements. This follows the awareness that certain tax income sources, such as resource taxes and trade taxes, are relatively simple to collect (Rogan, 2022). The majority of sub-Saharan African nations fare poorly on nearly all of these indices. Despite this underperformance, the capacity to collect taxes, particularly in low-income countries, has increased over time, and significant improvement in tax revenue mobilization capacity was observed in the 2000s due to a number of factors, such as export growth and improved institutional quality (Ahmad & Brosio, 2022). Due to the capacity of tax administration as well as economic, social, and political limits, revenue collection is suboptimal. The average tax to GDP ratio for sub-Saharan African countries is less than 18 percent, which is significantly lower than the developed world average of 35 to 40 per cent (Aslam, Delepierre, & Gupta, 2022).

As a result of these limits, the majority of impoverished countries, particularly those in sub-Saharan Africa, rely on less efficient and easier-to-collect tax areas, such as trade taxes, but have not considerably improved their income tax collection. This means there is greater opportunity to boost income tax collection. Personal income taxes contribute very little to overall revenue collection, reflecting the limited capability of tax administrations (Owens, Schlenther, & Adjeyi, 2022).

METHODOLOGY

The study adopted a longitudinal research design strategy affecting fifty-four (54) African countries using convenience sampling technique. Forty-two (42) countries were sampled by secondary data from the World Development Indicators (WDI), and World Governance Indicators (WGI), spanning 2002 to 2022, and the choice of the data was informed by availability, and the research objectives preferred to achieve, including the estimation technique adopted. Two-step system Generalized Method of Moments was

utilized due to the limited time series dimension of the sample relative to the cross-sectional number of years, and number of countries. GMM is a dynamic panel estimator that accounts for the endogeneity of the lagged dependent variables in a dynamic panel model where there is a correlation between the explanatory variable and the error term. GMM additionally compensates for measurement error, omitted variable bias, and unobserved panel heterogeneity. In estimating panel data, the difference and system GMM estimators are the two most common GMM estimators. According to Arellano and Bond (1991) Difference GMM corrects endogeneity by differencing all regressors to eliminate fixed effects. According to (Blundell & Bond, 2000) the GMM system corrects endogeneity by providing additional instruments that drastically increase efficiency. It modifies the instruments to make them exogenous uncorrelated with the fixed effects. This produces two equations: the original equation and the altered equation. It subtracts the average of all future accessible observations of a variable, regardless of the number of gaps, as opposed to subtracting the prior observation from the current one. This is calculable for all observations with the exception of the final one for each individual, hence minimizing data loss.

The analysis utilized a dynamic panel definition and system Generalized Methods of Moments (GMM) estimate method from (Beck, Levin, & Angelone, 2007; Demirguc-Kunt, Levine, & Beck, 2004). The dynamic panel regression model allows the researcher to add lags of the dependent variable as a predictor variable, as specified below:

$$Y_{it} = \omega Y_{it-1} + \beta X_{it} + \varepsilon_{it} \dots\dots\dots (1)$$

$$\varepsilon_{it} = \mu_t + \lambda_i$$

Where, Y_{it} denotes the dependent variable, Y_{it-1} is the lag of the dependent variable, and X_{it} , represent a matrix of the dependent variable ($1 \times k$), δ_0 is the unobserved country effect, ω is the coefficient of the lag dependent variable, β is the coefficient of the explanatory variables including the control variables. The unobserved individual effect is represented by λ_i , μ_t is the time effect, i is the number of variables or observations in the study. N represents the number of countries and T is the time (years). \mathcal{E} represents the error term which is correlated with the lagged dependent variable (Y_{it-1}). The inclusion of the lag dependent variable is to deal with the issues of autocorrelation.

In order to ascertain the effect of digitization on tax revenue mobilization in sub-Saharan Africa, a model is specified as follows:

$$Taxrev_{it} = a_1 Taxrev_{it-1} + a_2 Digit_{it} + a_3 POP_{it} + a_4 Trade_{it} + a_5 GDP_{it} + \varepsilon_{it} \dots\dots\dots (2)$$

Table 1. Description of variables, and measurement

Variable	Notation	Description & Measurement of variables	Sources
Tax Revenue Mobilization	Taxrev	Tax revenue is measured as a composite index of, i. Taxes on international trade (% of revenue), ii. Taxes on income, profits and capital gains (% of revenue), iii. Taxes on goods and services (% of revenue), iv. Tax revenue (% of GDP), extracted from the World Development Indicators (WDI)	WDI
Digitization	Digit	Digitization is measured as a composite index of the following variables: i. Used a mobile phone or the internet to access an account, in labour force (% age 15+) ii. Received digital payments, in labour force (% age 15+) iii. Owns a debit or credit card, in labour force (% ages 15+) iv. Made or received a digital payment, in labour force (% age 15+), extracted from the global Financial Inclusion Database base	Findex
Population	POP	Population, total	WDI
Trade	Trade	Trade (%of GDP)	WDI
GDP	GDP	Gross Domestic Growth (annual %)	WDI

Source: Author's Compilation

RESULTS AND DISCUSSION

The analysis's conclusions and their interpretation are presented here with supporting empirical evidence. In this section, we will discuss how the spread of digital technology has affected the collection of tax revenues in sub-Saharan Africa. This link is established by a number of reviews, including the technological acceptance model. There are three (3) different tables in this research up for discussion. Table 2 displays descriptive statistics to shed light on the variables and their possible link. There is a correlation matrix shown in Table 3. The Panel data regression results are shown in Table 4. Assessing the potential digitalization has for increasing tax collection in sub-Saharan Africa.

Table 2. Descriptive Statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
Tax	420	2.16	0.55	1.03	4.07
taxincome	420	4.43	2.79	1.79	15.93
Goods	420	5.34	2.91	2.72	16.78
Taxrev	420	1.92	0.75	0.86	4.36
internet	420	2.47	1.17	0.78	7.00
Digipay	420	2.59	1.38	0.50	6.62
credcard	420	1.74	1.15	0.49	6.88
rdigipay	420	2.24	0.51	1.35	3.29
Pop	420	1.34	0.49	0.71	3.07
Trade	420	1.10	0.47	0.43	3.56
Gdp	420	2.54	0.80	1.20	4.49

The descriptive statistics in table 2 shows some of the statistical features of the examined variables which spanned from 2002 to 2021. Tax on international trade averaged at 2.16%, taxes on income for the period averaged at 4.43%, goods and services stood at 5.34%. Tax-revenue was on average of 1.92%, the use of mobile phones or internet also accounted for about 2.47%. The total number of people living in the urban setting and received digital payments stood at 2.59%, including a mean average of 1.74% for number of people using credit card in the sub-Saharan Africa. The number of people who received digital payments for the people also stood at 2.24%. Population, trade, and GDP also have mean averages of 1.34%, 1.10%, and 2.54%. The standard deviation for the statistics indicates how wide the data disperses from the mean values in the descriptive statistics. The minimum value ranges between 3.07 for population to 16.78 for goods and services.

Table 3. Pairwise correlations

Variables	(1)	(2)	(3)	(4)	(5)
(1) taxrev	1.000				
(2) digit	0.362*	1.000			
(3) pop	0.364*	0.933*	1.000		
(4) trade	0.163*	0.324*	0.385*	1.000	
(5) gdp	0.262*	0.137*	0.243*	0.453*	1.000

* shows significance at $p < 0.01$

The correlation matrix in table 3 shows that all variables were positively correlated with tax revenue. Digitization has a weak positive relationship with tax revenue as it has a value of 0.62 also indicating that, both variables move in a positive direction. Population also has a positive correlation with tax revenue as they move in same direction; this implies that, as population increases, tax revenue is most likely to increase if governments

implement the right tax collection measures. Trade which is measured as a percentage of GDP has a positive relationship with revenue and significant, as trade increases, tax revenue also increases. Also, there is a positive relationship between GDP and tax revenue, as tax revenue increases, GDP also increases and vice versa.

Table 4. Dynamic panel-data estimation, two-step system GMM for the effect of digitization and tax revenue mobilization in Africa

	(1) TAXREV	(2) DIGIT	(3) TRADE	(4) GDP
L.taxrev	1.011*** (17.14)			
taxrev		0.0811*** (1.28)	0.00197*** (0.05)	0.0228*** (0.51)
digit	0.0158*** (0.19)		0.0269*** (0.41)	0.135*** (1.04)
pop	0.0267*** (0.29)	0.0116*** (0.13)	0.0119*** (0.21)	0.131*** (1.17)
trade	0.0794*** (0.55)	0.0378*** (0.43)		0.0651*** (0.45)
gdp	0.0379*** (0.99)	0.0161*** (0.69)	0.00565*** (0.20)	
L.digit		0.993*** (7.32)		
L.trade			0.927*** (14.84)	
L.gdp				1.052*** (11.55)
AR2	0.543	0.042	0.315	0.713
Sargan	0.345	0.768	0.213	0.047
Hansen	0.078	0.172	0.363	0.229
No. of Instr	17	17	17	17
No. of Group	42	42	42	42
Prob>Ch2	0.000	0.000	0.000	0.000
_cons	0.415*** (0.55)	0.308*** (0.65)	0.328*** (0.75)	0.404*** (0.46)
N	378	378	378	378

Exhibited in Table 4 is the estimation of the dynamic panel data for the research window. Since tax income has a substantial lag value, the present worth of tax revenue mobilization is dependent on both its historical and projected values. As governments raise their investments in digital infrastructure, it is expected that tax revenue mobilization will rise as a result. By lowering transaction costs and making room for innovative tax policy, digital technologies contribute in the betterment of tax administration. It has been suggested by Zhang, Patel, and Lowery (2023) that government revenue collection and the prevention of fraud could both benefit from the widespread adoption of digital systems. However, if the institutions of the governing system are weak, tax income may not increase. The study's author drew the conclusion that improvements in information and communications technology (ICT) infrastructure and governance quality did not contribute significantly to increases in tax revenue collection. Additionally, there is a significant correlation between population growth and tax revenue mobilization; as more people enter the labour force and buy homes; governments collect more money in taxes. In most cases, an increase in tax revenue may be attributed to a rise in population rather than a rise in the market value of all property. There is a favourable correlation between trade, tax revenue mobilization, and gross Domestic Product.

CONCLUSION, RECOMMENDATIONS AND POLICY IMPLICATIONS

The study is one of the few to examine the impact of digitalization in sub-Saharan Africa. In an effort to provide empirical evidence of recent trends in the use of ICT to help tax administration in sub-Saharan Africa, where tax compliance and efforts to grow the tax base are very low compared to wealthy countries, this study was conducted. The study's analytical framework and model formulation are guided by prior research, and the technological acceptance model serves as its theoretical foundation. The study utilized panel data from 42 African nations between 2002 and 2021. The empirical technique incorporates a variety of econometric tests and estimations; therefore, the study employed two-step system generalized methods of moments to test the hypothesis that digitalization influences tax revenue mobilization. The study identified a significant positive correlation between digitization and tax revenue mobilization in sub-Saharan African nations, suggesting that African governments should invest in digitization to improve tax income. According to Truong and Van (2023) digitization should be viewed as a transformative factor for tax systems globally. The use of ICT in economic transactions and tax administrations carries the possibility of addressing tax compliance, evasion, and avoidance in

contemporary Africa, along with an increase in information that could also provide new opportunities for tax policy design.

According to the Author, this might also lead to a centralized database on taxpayers' income, consumption, and wealth, allowing governments to better focus income redistribution by basing tax schedules on such information. Telukdarie, Matjuta, and Philbin (2023) conducted research on the relationship between digitization and tax revenue and discovered that tax authorities in contemporary Africa may encounter new business models that exacerbate underlying difficulties. Therefore, it is proposed that Sub-Saharan African governments invest in digitization to boost tax revenue mobilization in Africa. It is appropriate for stakeholders to develop ICT taxes in accordance with taxation principles; mobile-money taxes are difficult in the majority of African nations at present. In order to integrate digitization with taxation, financial inclusion, social inclusion, and the achievement of sustainable development goals, African governments must reconsider the design of digital taxation in accordance with taxation principles. The research is constrained in that it focused solely on digitization, which cannot flourish if institutional quality is not improved. Future study should focus on the interaction effect of governance quality on digitization and tax revenue mobilization in sub-Saharan Africa, it is suggested.

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